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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,486

10/17/2006

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4804-5

2589

23117 7590 06/01/2010
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EXAMINER

KAHN, RACHEL

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

06/01/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,486	Applicant(s) POSCHALCO ET AL.	
	Examiner RACHEL KAHN	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-32 and 34-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-32 and 34-36 is/are rejected.
- 7) ☒ Claim(s) 30-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 25-32 and 34-36 are pending as amended on 8/31/09.

Response to Amendment

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Any rejections stated in the previous Office Action and not repeated below are withdrawn.

New grounds of rejection, not necessitated by Applicant's amendment, have been set forth herein. As such, this action has been made NON-FINAL. The rejections are similar to those previously set forth. The rejections have been modified and an additional reference cited to address Applicant's concerns regarding improper hindsight.

Claim Objections

Claims 30-32 are objected to because of the following informalities:

Independent claim 25 recites a hyperbranched polymer prepared from one or more building blocks AB₂ which is glycidol.

Dependent claim 30 recites a formula (II) incorporating AB₂, but in the description of the formula, refers to AB_m (see line 10 of the claim). Examiner suspects Applicant had intended to change AB_m to AB₂, as most AB_m's were amended to AB₂ in the claims submitted 6/2/09.

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Similarly, claims 31 (line 3) and claim 32 (formula and description of formula in claim) still recite AB_m.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Tournilhac** (US 6287552) in view of **Keller** et al (US 6143850).

Tournilhac discloses a cosmetic composition for application to the skin comprising, in a physiologically acceptable medium:

- (A) a dendritic polyester polymer having terminal hydroxyl functional groups; and
- (B) at least one film-forming polymer, such as acrylic or vinyl polymers and copolymers (col 2, lines 1-25; col 5, lines 20-34).

The composition is suited for skin protection products (col 6, lines 21-25), including sunscreens (col 5, line 61). Tournilhac discloses that the dendritic polymers are capable of reinforcing the cohesion of a film formed by customary film forming polymers, while minimizing undesirable increases in viscosity (col 1, lines 13-50).

Tournilhac teaches that the dendritic polymer (A) may be prepared from glycerol (col 4, lines 5-9). When incorporated into a polymer, glycidol ring-opens to become structurally equivalent to glycerol. Tournilhac's glycerol initiated dendritic polymer therefore fulfills the limitation in instant claim 25 reciting that one of the building blocks is glycidol.

Tournilhac further teaches that 1-90 mol% of the terminal hydroxyl functions on the dendritic polymer may be functionalized with a chain terminating agent chosen so as to modify the physicochemical properties of the polymer. The chain terminating agent may be chosen from a wide variety of compounds capable of forming covalent bonds with the terminal hydroxyl functions. Many of the examples of such compounds taught by Tournilhac are carboxylic acids, including aromatic monocarboxylic acid (viii) (col 4, lines 9-43).

Tournilhac fails to suggest functionalizing the hydroxyl terminal groups with the instantly recited aromatic monocarboxylic species V-E in claim 25 (a p-aminobenzoate derivative).

Keller discloses a cosmetic sunscreen comprised of polymer-bound benzoic acid chromophores for protecting the skin and hair from UV radiation. The UV absorbing groups are covalently linked to the polymer (col 1, lines 1-17). As the UV absorbing groups, Keller teaches that 5-95% of the units are p-aminobenzoate derivatives (col 1, line 50 to col 2, line 20; see formula I, unit "a;" see also Examples 1-3).

Given Tournilhac's teaching to use the composition as sunscreen and teaching of functionalizing the hydroxy end groups of the dendritic polymer with aromatic

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monocarboxylic acids, it would have been obvious to one having ordinary skill in the art at the time the invention was made to functionalize the film forming polymer as well as the dendritic polyester taught by Tournilhac with a p-aminobenzoate derivative, as taught by Keller. The motivation would have been to impart UV absorbing, skin protecting functionality to the polymer composition taught by Tournilhac. One would have recognized that the carboxy-containing UV light absorbing chromophore (Keller, col 5, line 25) would react with the hydroxy end group to form a covalent (ester) bond.

Regarding claims 26-28, Tournilhac is silent with regard to the degree of branching, however, Tournilhac teaches that the polymers are "highly branched." It would be obvious to one of ordinary skill that a highly branched polymer has a degree of branching above 25%. Furthermore, Tournilhac exemplifies the use of Boltorn H40, which has 64 terminal hydroxyl groups and a molecular weight of 7300 g/mol.

Regarding claim 29, the hyperbranched polymer of Tournilhac in view of Keller fulfills the instant claim formula.

Claims 25-31 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Tournilhac** (US 6287552) in view of **Magnusson** et al (US 6617418) and **Haag** et al (in J Am Chem Soc 2000, 122, 2954-2955) and further in view of **Keller** et al (US 6143850).

Tournilhac discloses a cosmetic composition for application to the skin comprising, in a physiologically acceptable medium:

(A) a dendritic polyester polymer having terminal hydroxyl functional groups; and
(B) at least one film-forming polymer, such as acrylic or vinyl polymers and copolymers (col 2, lines 1-25; col 5, lines 20-34).

The composition is suited for skin protection products (col 6, lines 21-25), including sunscreens (col 5, line 61). Tournilhac discloses that the dendritic polymers are capable of reinforcing the cohesion of a film formed by customary film forming polymers, while minimizing undesirable increases in viscosity (col 1, lines 13-50).

The hyperbranched polyester disclosed by Tournilhac fails to fulfill the instant claims requiring a hyperbranched polyether from glycidol building blocks.

Like Tournilhac, Magnusson teaches that dendritic polymers have no entanglement and lower viscosity in bulk compared to linear polymers (col 1, lines 20-29). Magnusson further teaches that, like hyperbranched polyesters, hyperbranched polyethers have terminal hydroxyl groups which can be functionalized with desired end groups to provide desired properties. However, polyethers are less susceptible to hydrolysis, more flexible in the main chain, and are more easily purified by simple precipitation than corresponding polyesters (col 2, lines 1-14). Magnusson discloses hyperbranched polyethers prepared from oxetane (col 2, lines 31-33).

Like Magnusson, Haag discloses hyperbranched polyethers which have multiple reactive chain ends suited for use as supports for functional organic molecules. Haag teaches that hyperbranched polyether polyols can be prepared from either oxetane or glycidol, but that only glycidol is commercially available, permits control of initiator incorporation and molecular weight, and has low polydispersity (p 2954, left column).

In view of the teachings of both Magnusson (motivation to replace polyester with polyether) and Haag (polyether from glycidol superior to polyether from oxetane), it would have been obvious to one having ordinary skill in the art to substitute Haag's hyperbranched polyglycerol for Tournilhac's hyperbranched polyester in order to lessen susceptibility to hydrolysis, increase polymer chain flexibility and simplify purification as well as control molecular weight and polydispersity.

Tournilhac teaches that 1-90 mol% of the terminal hydroxyl functions on the dendritic polymer may be functionalized with a chain terminating agent (or "capping group" as recited in instant claim 35) chosen so as to modify the physicochemical properties of the polymer. Tournilhac teaches that the chain terminating agent may be chosen from a wide variety of compounds capable of forming covalent bonds with the terminal hydroxyl functions. Many of the examples of such compounds taught by Tournilhac are carboxylic acids, including aromatic monocarboxylic acid (viii) (col 4, lines 9-43).

Tournilhac fails to suggest functionalizing the hydroxyl terminal groups with instantly recited aromatic monocarboxylic species V-E in claim 25 (a p-aminobenzoate derivative).

Keller discloses a cosmetic sunscreen comprised of polymer-bound benzoic acid chromophores for protecting the skin and hair from UV radiation. The UV absorbing groups are covalently linked to the polymer (col 1, lines 1-17). As the UV absorbing

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groups, Keller teaches that 5-95% of the units are p-aminobenzoate derivatives (col 1, line 50 to col 2, line 20; see formula I, unit "a;" see also Examples 1-3).

Given Tournilhac's teaching to use the composition as sunscreen, and teaching of functionalizing the hydroxy end groups of the dendritic polymer with aromatic monocarboxylic acids, it would have been obvious to one having ordinary skill in the art at the time the invention was made to functionalize both the film forming polymer and the hyperbranched polyether taught by Tournilhac (in view of Haag and Magnusson) with a p-aminobenzoate derivative, as taught by Keller. The motivation would have been to impart UV absorbing, skin protecting functionality to the polymer composition taught by Tournilhac. One would have recognized that the carboxy-containing UV light absorbing chromophore (Keller, col 5, line 25) would react with the hydroxy end group to form a covalent (ester) bond.

Regarding claims 26-28, Haag teaches a hyperbranched polyglycerol having a degree of branching of 58%, a molecular weight of 1300 g/mol and a degree of polymerization of 15 (p 2954 right column, bottom).

Regarding claims 29-31, Haag teaches hyperbranched polyglycerol from glycidol and trimethylolpropane. Functionalization of the polymer, made obvious as discussed above, results in a polymer fulfilling the formulas of instant claims 29 and 30 (see scheme 1, p 2955).

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Tournilhac** (US 6287552) in view of **Magnusson** et al (US 6617418) and **Haag** et al (in J Am Chem Soc 2000, 122, 2954-2955) and further in view of **Keller** et al (US 6143850) and further in view of **Sunder** et al (in Macromolecules, vol 33, No 21, 2000, pp 7682-7692).

The discussion with regard to the rejection of claim 29 over Tournilhac in view of Magnusson and Haag and further in view of Keller is incorporated here by reference.

The hyperbranched polyglycerol of Haag fails to fulfill the formula recited in instant claim 32, as Haag fails to suggest a comonomer fulfilling component "C" in the formula.

Sunder teaches that ring opening multibranching polymerization of glycidol produces hyperbranched polyether polyols with narrow polydispersities (p 7682, right col, top). Sunder further teaches lowering the degree of branching in a predictable manner by copolymerizing the glycidol AB_m type monomers with linear AB monomers (p 7682, right column). This allows tailoring of material properties such as molecular architecture, functionality, and thermal behavior (p 7683, top left). In addition, branching AB_m type monomers are generally expensive compared to linear AB monomers (p 7686 top left). Incorporation of linear polymers represents a cost-savings strategy.

It would have been obvious, therefore, to one of ordinary skill in the art at the time the invention was made, to copolymerize the glycidol taught by Haag with a linear comonomer, as taught by Sunder in order to tailor the material properties of the polymer

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in a predictable manner, as well as to decrease costs by using less expensive monomers.

Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Tournilhac** (US 6287552) in view of **Magnusson** et al (US 6617418) and **Haag** et al (in J Am Chem Soc 2000, 122, 2954-2955) and further in view of **Keller** et al (US 6143850) and further in view of **Sunder** (in *Macromolecules*, **2000**, 33, pp 309-314; cited herein as "MM 00")

The discussion with regard to the rejection of claim 29 over Tournilhac in view of Magnusson and Haag and further in view of Keller is incorporated here by reference.

Tournilhac, Magnusson and Haag fail to teach adding polyethyleneoxide or polypropyleneoxide linker units.

Sunder (in MM 00) teaches that adding short oligo(propylene oxide) segments to the hydroxyl end groups of hyperbranched polyols permits tailoring the polarity of the polymer without reducing the functionality or varying the structure. Sunder (MM 00) teaches that attaching the segments increases the solubility of the polymers in organic solvents, which is important given that most applications for the polymers involve further functionalizing of end groups (p 309, introduction). The solubility of the polymers can be tailored by variation of the block lengths between 1 and 5 (p 314, conclusion). It would have been obvious, therefore, to one of ordinary skill, to attach a straight chain ether segment, as taught by Sunder (MM 00) to the hyperbranched polyol support molecule

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made obvious as discussed above in order to achieve better solubility for the functionalization reaction with the UV absorbing groups. Regarding instant claim 35, it would have been obvious to one of ordinary skill in the art to vary the number of capping groups within the claimed ranges in order to tailor the solubility of the polymer. Regarding instant claim 36, Sunder teaches up to five propylene oxide units (15 carbon atoms) per segment (MM 00 abstract).

Claims 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Keller** et al (US 6143850) in view of **Tournilhac** (US 6287552).

Keller discloses a cosmetic sunscreen comprised of polymer-bound benzoic acid chromophores for protecting the skin and hair from UV radiation. The UV absorbing groups are covalently linked to the polymer (col 1, lines 1-17). As the UV absorbing groups, Keller teaches that 5-95% of the units are p-aminobenzoate derivatives (col 1, line 50 to col 2, line 20; see formula I, unit "a;" see also Examples 1-3).

Keller teaches a linear polymeric backbone, and therefore fails to teach that the polymeric carrier for the UV absorbing groups is a hyperbranched polymer derived from glycidol (as required by the instant claims).

Tournilhac discloses a cosmetic composition for application to the skin comprising, in a physiologically acceptable medium:

(A) a dendritic polyester polymer having terminal hydroxyl functional groups; and

(B) at least one film-forming polymer, such as acrylic or vinyl polymers and copolymers (col 2, lines 1-25; col 5, lines 20-34).

The composition is suited for skin protection products (col 6, lines 21-25), including sunscreens (col 5, line 61). Tournilhac discloses that the dendritic polymers are capable of reinforcing the cohesion of a film formed by customary film forming polymers, while minimizing undesirable increases in viscosity (col 1, lines 13-50). Tournilhac teaches that the dendritic polymer may be present at up to a 1:1 weight ratio of the film forming polymer (col 5, lines 42-47).

It would have been obvious to one having ordinary skill in the art to add a dendritic polymer, as taught by Tournilhac to the functionalized film forming polymer taught by Keller in order to reinforce the cohesion of the film formed, as well as minimize undesirable increases in viscosity.

Tournilhac further teaches that 1-90 mol% of the terminal hydroxyl functions on the dendritic polymer may be functionalized with a chain terminating agent chosen so as to modify the physicochemical properties of the polymer. The chain terminating agent may be chosen from a wide variety of compounds capable of forming covalent bonds with the terminal hydroxyl functions. Many of the examples of such compounds taught by Tournilhac are carboxylic acids, including aromatic monocarboxylic acid (viii) (col 4, lines 9-43).

It would have been obvious, therefore, to one having ordinary skill in the art, to modify the hydroxy terminal groups on the dendritic polymer in the composition made obvious by Keller in view of Tournilhac with the same p-aminobenzoate groups present

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on the film forming polymer. The motivation would have been to maintain the same level of UV-absorbing functionality in the composition despite replacing up to half of the linear film forming polymer with the dendritic polymer. The ordinary artisan would have had reasonable expectation of success in modifying the hydroxy groups with p-aminobenzoic acid given that Tournilhac teaches aromatic monocarboxylic acids as suitable chain terminating agents. Furthermore, Keller teaches that the functional groups ultimately are derived from carboxylic containing UV chromophores (col 5, lines 22-27). One would have recognized that the carboxy-containing UV chromophore p-aminobenzoic acid would react with the hydroxy end group on the dendritic polymer to form a covalent (ester) bond.

Regarding the recitation that the polymer is the product of one or more glycidols: Tournilhac teaches that the dendritic polymer (A) may be prepared from glycerol (col 4, lines 5-9). When incorporated into a polymer, glycidol ring-opens to become structurally equivalent to glycerol. Tournilhac's glycerol initiated dendritic polymer therefore fulfills the limitation in instant claim 25 reciting that one of the building blocks is glycidol.

Regarding claims 26-28, Tournilhac is silent with regard to the degree of branching, however, Tournilhac teaches that the polymers are "highly branched." It would have been obvious to one of ordinary skill that a highly branched polymer has a degree of branching above 25%. Furthermore, Tournilhac exemplifies the use of

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Boltorn H40, which has 64 terminal hydroxyl groups and a molecular weight of 7300 g/mol.

Regarding claim 29, the hyperbranched polymer of Keller in view of Tournilhac fulfills the instant claim formula.

Claims 25-31 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Keller** et al (US 6143850) in view of **Tournilhac** (US 6287552) in view of **Magnusson** et al (US 6617418) and **Haag** et al (in J Am Chem Soc 2000, 122, 2954-2955).

The discussion with regard to the rejection of claims 25-29 over Keller in view of Tournilhac is incorporated here by reference.

The hyperbranched polyester disclosed by Tournilhac fails to fulfill the instant claims requiring a hyperbranched polyether from glycidol building blocks.

Like Tournilhac, Magnusson teaches that dendritic polymers have no entanglement and lower viscosity in bulk compared to linear polymers (col 1, lines 20-29). Magnusson further teaches that, like hyperbranched polyesters, hyperbranched polyethers have terminal hydroxyl groups which can be functionalized with desired end groups to provide desired properties. However, polyethers are less susceptible to hydrolysis, more flexible in the main chain, and are more easily purified by simple precipitation than corresponding polyesters (col 2, lines 1-14). Magnusson discloses hyperbranched polyethers prepared from oxetane (col 2, lines 31-33).

Like Magnusson, Haag discloses hyperbranched polyethers which have multiple reactive chain ends suited for use as supports for functional organic molecules. Haag teaches that hyperbranched polyether polyols can be prepared from either oxetane or glycidol, but that only glycidol is commercially available, permits control of initiator incorporation and molecular weight, and has low polydispersity (p 2954, left column).

In view of the teachings of both Magnusson (motivation to replace polyester with polyether) and Haag (polyether from glycidol superior to polyether from oxetane), it would have been obvious to one having ordinary skill in the art to substitute Haag's hyperbranched polyglycerol for Tournilhac's hyperbranched polyester in the composition made obvious by Keller in view of Tournilhac. The motivation would have been in order to lessen susceptibility of the hyperbranched polymer to hydrolysis, increase polymer chain flexibility and simplify purification as well as control molecular weight and polydispersity.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Keller** et al (US 6143850) in view of **Tournilhac** (US 6287552) in view of **Magnusson** et al (US 6617418) and **Haag** et al (in J Am Chem Soc 2000, 122, 2954-2955) and further in view of **Sunder** et al (in Macromolecules, vol 33, No 21, 2000, pp 7682-7692).

The discussion with regard to the rejection of claim 29 above over Keller in view of Tournilhac, Magnusson, and Haag is incorporated here by reference.

The hyperbranched polyglycerol of Haag fails to fulfill the formula recited in instant claim 32, as Haag fails to suggest a comonomer fulfilling component "C" in the formula.

Sunder teaches that ring opening multibranching polymerization of glycidol produces hyperbranched polyether polyols with narrow polydispersities (p 7682, right col, top). Sunder further teaches lowering the degree of branching in a predictable manner by copolymerizing the glycidol AB_m type monomers with linear AB monomers (p 7682, right column). This allows tailoring of material properties such as molecular architecture, functionality, and thermal behavior (p 7683, top left). In addition, branching AB_m type monomers are generally expensive compared to linear AB monomers (p 7686 top left). Incorporation of linear polymers represents a cost-savings strategy.

It would have been obvious, therefore, to one of ordinary skill in the art at the time the invention was made, to copolymerize the glycidol taught by Haag with a linear comonomer, as taught by Sunder in order to tailor the material properties of the polymer in a predictable manner, as well as to decrease costs by using less expensive monomers.

Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Keller** et al (US 6143850) in view of **Tournilhac** (US 6287552) in view of **Magnusson** et al (US 6617418) and **Haag** et al (in J Am Chem Soc 2000, 122, 2954-2955) and

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further in view of **Sunder** (in *Macromolecules*, **2000**, 33, pp 309-314; cited herein as “MM 00”)

The discussion with regard to the rejection of claim 29 above over Keller in view of Tournilhac, Magnusson, and Haag is incorporated here by reference.

Tournilhac, Magnusson and Haag fail to teach adding polyethyleneoxide or polypropyleneoxide linker units.

Sunder (in MM 00) teaches that adding short oligo(propylene oxide) segments to the hydroxyl end groups of hyperbranched polyols permits tailoring the polarity of the polymer without reducing the functionality or varying the structure. Sunder (MM 00) teaches that attaching the segments increases the solubility of the polymers in organic solvents, which is important given that most applications for the polymers involve further functionalizing of end groups (p 309, introduction). The solubility of the polymers can be tailored by variation of the block lengths between 1 and 5 (p 314, conclusion). It would have been obvious, therefore, to one of ordinary skill, to attach a straight chain ether segment, as taught by Sunder (MM 00) to the hyperbranched polyol support molecule made obvious as discussed above in order to achieve better solubility for the functionalization reaction with the UV absorbing groups. Regarding instant claim 35, it would have been obvious to one of ordinary skill in the art to vary the number of capping groups within the claimed ranges in order to tailor the solubility of the polymer. Regarding instant claim 36, Sunder teaches up to five propylene oxide units (15 carbon atoms) per segment (MM 00 abstract).

Response to Arguments

Applicant is correct that Vanmaele is unavailable as prior art under 102(e). As such, the rejection over Vanmaele (US 7507785) has been withdrawn.

Applicant argues that Keller discloses linear polymers, while Tournilhac discloses dendritic polymers. Furthermore, Tournilhac discloses dendritic polyester, while the claim requires polyether. Applicant argues that the combination of Keller, Tournilhac, and the Sunder references were based on impermissible hindsight.

In response to Applicant's concerns regarding improper hindsight, the rejections set forth herein have been modified from the rejections set forth in the action dated 12/16/09. Specifically, Tournilhac provides clear motivation to combine dendritic polymers with linear polymers in cosmetic formulations. This teaching to combine the two types of polymers was not adequately described in the previously set forth rejection.

Regarding Applicant's argument that Tournilhac teaches only polyester and not polyethers, the rejections have been modified to incorporate the teachings of Magnusson to show that one having ordinary skill would have recognized that hyperbranched polyethers provide the same functionalizable terminal hydroxyl groups as polyesters, and provide further benefits, such as less susceptibility to hydrolysis. Additionally, the rejections set forth in this action reflect the fact that claims 25-29 are not narrowed to polyethers. Rather, instant claims 25-29 require only that one glycidol is incorporated into the polymer.

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Finally, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RACHEL KAHN whose telephone number is (571)270-7346. The examiner can normally be reached on Monday to Friday 8:00 am to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. K./

Examiner, Art Unit 1796

/RANDY GULAKOWSKI/

Supervisory Patent Examiner, Art Unit 1796